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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/739,634 | 12/20/2000 | Akihiro Kondoh | 030675-047 | 4754 |

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| EXAMINER | |
|---|---|
| CHU, CHRIS C | |
| **ART UNIT** | **PAPER NUMBER** |
| 2815 | |

DATE MAILED: 07/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/739,634 | KONDOH, AKIHIRO | |
| | Examiner | Art Unit | |
| | Chris C. Chu | 2815 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *26 April 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1, 4 ~ 6, 8, 10 ~ 15 and 17 ~ 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4 ~ 6, 8, 10 ~ 15 and 17 ~ 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's amendment filed on April 26, 2002 has been received and entered in the case.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teruhiro in view of Sawada.

Regarding claim 1, Teruhiro discloses in Fig. 1 an electronic apparatus comprising:

- an electronic circuit board (5);
- an electrically conductive casing (14) for encasing said electronic circuit board;
- a semiconductor element module (3) electrically connected to said electronic circuit board via a plurality of lead terminals (4a and 4b), said semiconductor element module having a column-shaped section, an axis of said column-shaped section being parallel to a direction of extension of said lead terminals; and

- a resin fixture (16) intervening between said electrically conductive casing (14) and said semiconductor element module (3), said resin fixture (16) mounted with said semiconductor element module (3) and fitted to said electrically conductive casing.

Teruhiro does not disclose a cylinder-shaped section in the resin fixture, an outer periphery surface of said cylinder-shaped section being plated and an inner periphery surface of said cylinder-shaped section not being plated. However, Sawada discloses in Fig. 4 a cylinder-shaped section (22) in a resin fixture for retaining, in its inner periphery, a column-shaped section (26) of a semiconductor element device, an outer periphery surface of said cylinder-shaped section being plated (30) and an inner periphery surface of said cylinder-shaped section not being plated. Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to modify Teruhiro by using the cylinder-shaped section in the resin fixture, an outer periphery surface of the cylinder-shaped section being plated and an inner periphery surface of the cylinder-shaped section not being plated as taught by Suzuki et al. The ordinary artisan would have been motivated to modify Teruhiro in the manner described above for at least the purpose of increasing an optical coupling efficiency (read abstract, lines 3 and 4).

Regarding claim 8, since Teruhiro dose not limit the adhesive sheet to any particular or specific adhesive sheet, his/her disclosure encompasses all well known adhesive sheet including "an electrically conductive adhesive sheet."

4. Claims 4 ~ 6 and 10 ~ 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teruhiro in view of Sawada as applied to claim 1 above, and further in view of Suzuki et al.

Teruhiro, as modified, discloses the claimed invention except for said semiconductor element module having a raised portion and a recessed portion and an externally threaded portion formed on its outer surface at a site where said semiconductor element module being fitted to said resin fixture, and wherein said resin fixture having a recessed portion and a raised portion and an internally threaded portion formed in its inner surface at a site where said semiconductor module being mounted, said recessed portion being fitted to said raised portion. However, Suzuki et al. shows said semiconductor element module (1) having a raised portion (part of 2) and a recessed portion (part of 2) and an externally threaded portion (2) formed on its outer surface at a site where said semiconductor element module being fitted to said resin fixture (see Fig. 2), and wherein said resin fixture (3) having a recessed portion (part of 5) and a raised portion (part of 5) and an internally threaded portion (5) formed in its inner surface at a site where said semiconductor module being mounted, said recessed portion being fitted to said raised portion (see Fig. 1). Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to further modify Teruhiro by including a raised portion and a recessed portion and an externally threaded portion formed on outer surface of the semiconductor element module and corresponding a recessed portion and a raised portion and an internally threaded portion formed in inner surface of the resin fixture as taught by Suzuki et al. The ordinary artisan would have been motivated to further modify Teruhiro in the manner described above for at least the purpose of providing the desired performance to be consistently obtained.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teruhiro in view of Riichi et al.

Regarding claim 20, Teruhiro discloses in Fig. 1 an electronic apparatus comprising:

- an electronic circuit board (5);
- an electrically conductive casing (14) for encasing said electronic circuit board;
- an optical semiconductor element module (3) electrically connected to said electronic circuit board; and
- a resin fixture (16) intervening between said electrically conductive casing (14) and said optical semiconductor element module (3), said resin fixture (16) mounted with said optical semiconductor element module (3) and fitted to said electrically conductive casing, said resin fixture having a base opposing a surface of said electrically conductive casing onto which an opening (20a and 20b) is provided for the electrical connection of said optical semiconductor element module and two arms extending from said base along side surfaces of said electrically conductive casing and forming approximate U-shape along with said base, wherein
- a protrusion (19) is formed on the external surface of said resin fixture; and
- an aperture (18) is formed on each of said side surfaces of said conductive casing at a position corresponding to said protrusion.

Teruhiro does not disclose a protrusion being formed on near a tip of each of said arms of said resin fixture. It would have been obvious to one of ordinary skill in the art at the time the invention was made to move the protrusion to the near a tip of each of said arms of said resin fixture, since it has been held that rearranging parts of an invention involves only routine skill in

the art. In re Japikse, 86 USPQ 70. The ordinary artisan would have been motivated to modify Teruhiro in the manner described above for at least the purpose of providing an easy assembling.

Further, Teruhiro does not disclose a plurality of notched portions being formed on an external surface of said base of said resin fixture and a plurality of hooked portions being formed on said side surfaces of said electrically conductive casing in positions which fit said notched portions. However, Riichi et al. discloses in Fig. 1 a plurality of notched portions (65) being formed on an external surface of said base of said resin fixture (60) and a plurality of hooked portions (32) being formed on said side surfaces of said electrically conductive casing (30) in positions which fit said notched portions. Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to further modify Teruhiro by including notched portion and hooked portion as taught by Riichi et al. The ordinary artisan would have been motivated to further modify Teruhiro in the manner described above for at least the purpose of providing strong interconnection between the module and the case.

6. Claims 17 ~ 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teruhiro in view of Riichi et al. as applied to claim 20 above, and further in view of Suzuki et al.

Teruhiro, as modified, discloses the claimed invention except for said semiconductor element module having a raised portion and a recessed portion and an externally threaded portion formed on its outer surface at a site where said semiconductor element module being fitted to said resin fixture, and wherein said resin fixture having a recessed portion and a raised portion and an internally threaded portion formed in its inner surface at a site where said semiconductor module being mounted, said recessed portion being fitted to said raised portion. However,

Suzuki et al. shows said semiconductor element module (1) having a raised portion (part of 2) and a recessed portion (part of 2) and an externally threaded portion (2) formed on its outer surface at a site where said semiconductor element module being fitted to said resin fixture (see Fig. 2), and wherein said resin fixture (3) having a recessed portion (part of 5) and a raised portion (part of 5) and an internally threaded portion (5) formed in its inner surface at a site where said semiconductor module being mounted, said recessed portion being fitted to said raised portion (see Fig. 1). Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to further modify Teruhiro by including a raised portion and a recessed portion and an externally threaded portion formed on outer surface of the semiconductor element module and corresponding a recessed portion and a raised portion and an internally threaded portion formed in inner surface of the resin fixture as taught by Suzuki et al. The ordinary artisan would have been motivated to further modify Teruhiro in the manner described above for at least the purpose of providing the desired performance to be consistently obtained.

***Response to Arguments***

7. Applicant's arguments with respect to claims 1 and 17 ~ 19 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is (703) 305-6194. The examiner can normally be reached on M-F (10:30 - 7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Chris C. Chu
Examiner
Art Unit 2815

c.c.
July 24, 2002

SHEILA V. CLARK
PRIMARY EXAMINER